

ABSTRACT

A circuit board has apertures. Separate magnetic flux paths each form a closed loop that passes through at least one of the apertures and surrounds an interior space. The flux paths comprising portions that lie within magnetically permeable core pieces. At least two of the flux paths are oriented so that there is a straight line in the circuit board that passes through the interior spaces of the two flux paths without passing through any of the apertures that are included in the paths. An electrically conductive primary winding having a first segment that passes through the interior spaces of the permeable paths and a second segment located outside of the interior spaces. There are two or more electrically conductive secondary windings.

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